CALIFORNIA AND WESTERN MEDICINE

Owned and Published Monthly by the California Medical Association
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
ACCREDITED REPRESENTATIVE OF THE CALIFORNIA AND NEVADA MEDICAL ASSOCIATIONS

VOLUME XXXIX SEPTEMBER, 1933 No. 3

MALIGNANT DISEASE OF THE COLON*

By HARVEY B. STONE, M. D.
Baltimore, Maryland

THE greatest problem of clinical medicine at the present time is cancer. This is true of cancer in general. The problem becomes especially important in certain organs and parts of the body because of the relative frequency with which malignant disease involves these areas; and among such positions of election the colon occupies a prominent place. The successful cure of cancer anywhere depends upon the ability to destroy it completely, which usually means a wide removal of the growth and the surrounding structures. Obviously, such measures of treatment cannot be carried out in locations where vital structures would have to be sacrificed. It follows that growths in those areas which permit wide removal without interference with vital functions offer relatively favorable opportunities for cure, and among such favorable organs the colon must be counted, since it is possible to remove large portions of it without impairment of health or function. For these three reasons, then—the importance of cancer, the frequency with which it involves the colon, and the suitability of the colon for radical surgical removal—our subject is one that deserves emphasis.

IMPORTANCE OF EARLY DIAGNOSIS

In any discussion of cancer, primary importance is attached to early diagnosis, and this general rule applies as well to growths in the colon as to other parts of the body. The subject of diagnosis of malignant disease of the colon has already been treated by Doctor Bowen, so that only the most general reference on that phase of the subject will be made in this paper, the principal purpose of which is to discuss the matter of treatment. There are, however, certain well recognized and often emphasized points that, for the sake of completeness, should be mentioned. The first of these is the unfortunate absence of symptoms which may often be encountered in growths of the large bowel until the disease is far advanced. It is well known that in many cases the patient has no noticeable warning of ill health until acute obstruction suddenly develops. This silent growth not only renders early recognition difficult in many cases, but frustrates the success of popular campaigns to arouse the public to its danger. It is obvious that we cannot expect patients to present themselves for examination when they have no reason to believe that there is anything wrong with their health. The symptoms which are recognized as suggestive of disease of the large bowel, and which should arouse suspicion as to the possibility of cancer, may be catalogued briefly as follows: disturbances of intestinal function—gas pains, increasing constipation, distention and gurgling—palpable tumor, blood in the stool (either fresh or occult), anemia, loss of weight, and tenderness. It has been brought to the attention of the profession, notably by various publications from the Mayo Clinic, that there are certain differences in the symptomatology of growths in the right half of the colon and those in the left side. Thus, anemia is particularly apt to occur in tumors of the cecum and ascending colon. Indeed, a marked secondary anemia may be the only observable symptom for a considerable period of time, and the existence of such an unexplained anemia should direct attention toward the right side of the colon in efforts to explain it. On the other hand, obstructive symptoms are especially apt to occur when the growth involves the left side of the colon. In addition to the signs and symptoms that may be discovered by ordinary clinical examination, the x-ray provides an invaluable aid in diagnosis of this particular disease. Since that subject has been dealt with at length by Doctor Bowen, I shall content myself with one comment only: valuable as the x-ray is, there are certain cases in which the clinical signs and symptoms point strongly to a growth in the bowel which, for one reason or another, fails of demonstration by x-ray study. The writer has had several such experiences, and has formed the opinion that when the clinical evidence is strong for the existence of a growth, and the x-ray is unable to furnish support for this diagnosis, it is, nevertheless, the part of wisdom to explore the abdomen. In at least four such personal cases, a growth has been found.

* Guest speaker paper, read before the joint meeting of the Radiology and General Surgery Sections of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

PATHOLOGY

In regard to the pathology of malignant disease of the colon, cancer is practically the only form of growth to be considered. It is true that sarcoma does occur, but it is so rare as to be a condition worthy of reporting only when encountered. There are three types of cancer to be noted—scirrhus, adenocarcinoma, and the less common variety variously known as colloid, gelatinous, or mucoid. Bleeding and anemia are more characteristic of adenocarcinoma, and obstructive phenomena of scirrhus, although these are not hard-and-fast distinctions.

TREATMENT

To pass to the main purpose of this paper, the subject of treatment of malignant growth in the large bowel falls naturally into two major divisions: those procedures which aim at radical cure of the disease and those which are designed for palliation alone. Each of these groups again is susceptible of division into those cases which are partially or completely obstructed when they first come for treatment, and those in which obstruction is not present. The first of these classifications to deal with are those tumors which are suitable for radical cure in patients without obstruction; and we proceed to consider the principles to be employed in this group.

Preoperative Preparation.—The first, and one of the most important matters to be dealt with in considering the treatment of nonobstructive cancer of the colon, is proper preoperative preparation. It is the practice of the writer to devote at least four or five days to this preparation, and if necessary a longer time. The patient is kept in the hospital, but not confined to bed. The diet is of the high caloric, low-residue type. Fluids with sugar in them are pushed. Mineral oil night and morning, a daily small saline laxative, and a daily soap and water enema are prescribed to clear the bowel thoroughly. A careful general physical examination is made, and the patient is grouped and matched for blood transfusion. If there is marked anemia, a transfusion of 500 cubic centimeters is given two days before operation, and in every case where a radical removal is done, a similar transfusion is given in the operating room toward the end of the operation. It is believed that this careful preparation has greatly improved the results of operative treatment. The writer has not employed the preliminary vaccination of the peritoneum described by Rankin, and cannot express an opinion as to its value. There has been increasing emphasis laid upon the desirability of preliminary colostomy in cases of cancer of the colon. D. F. Jones of Boston was among the first to insist upon the need of preliminary colostomy in cases of obstruction, or near obstruction from growth, and the truth and importance of his teaching have so impressed surgeons that some, like A. O. Whipple, have expanded the idea to cover practically all cases of colon cancer. The writer, whose opinion in this respect is supported by Rankin, does not believe there is any necessity to make a two-stage operation of all cases, and does not employ preliminary colostomy unless there is definite evidence of some degree of actual obstruction.

Operative Procedures. — At operation, under general or spinal anesthesia, the abdomen is explored through a suitable incision to determine whether the growth is operable for cure. If there is liver, distant lymph gland, peritoneal, or omental involvement, or direct extension too great for successful removal, the case falls into the inoperable group and will be discussed later. If there is no obstruction, and the growth is favorable for radical cure, resection is undertaken. It is not the purpose of this paper to detail the steps of operation, but to outline the principles employed. If the growth is on the right side of the colon, from the cecum to the hepatic flexure, the whole ascending colon is mobilized by division of the peritoneum lateral to it, and lifted entirely out of its bed. As it is raised, the peritoneum, blood vessels and glands mesial to it are freed from the retroperitoneal structures. This whole mobilized portion with the associated vessels and glands is then resected, and an anastomosis made between the ileum and the transverse colon. The basis of this operation is the removal of the whole right side of the colon, even though the growth itself may be small and not seem to demand such an extensive resection. Personal experience has shown better results by this method than by smaller resections with preservation of part of the ascending colon or the hepatic flexure. The same principle is employed with growths on the left side from the splenic flexure to the sigmoid. Here the anastomosis is done between the transverse colon and the sigmoid. The operation is more difficult on the left side because of high position of the splenic flexure. For growths in the transverse colon and the sigmoid, a sufficient segment of gut containing the tumor, with the associated mesentery and glands is resected, and the two ends anastomosed. Formerly the writer employed the Parker-Kerr aseptic end-to-end type of anastomosis, and found it a very satisfactory operative procedure. Three subsequent strictures, one in the transverse and two in the sigmoid, have led to its abandonment, however, except where scantiness or immobility of bowel makes a lateral anastomosis impractical. Where there has been no obstruction, and the operative technique has been carried out in a satisfactory manner, no enterostomy as a safety valve is made proximal to the anastomosis, although many other surgeons do this as a routine. In doubtful cases it is advisable. A final word about a particular operation—although this paper has avoided the discussion of detailed operations. The writer shares the views of Rankin and others on the undesirability of the original Mickulicz method of dealing with growths in the colon, and considers that where some such procedure is necessary, the Rankin modification, known as obstructive resection, is much to be preferred. The writer has had no experience with radium or x-ray in the treatment of growths in the colon, either as an adjunct to operation or alone, although he has used it extensively in inoperable growths of the rectum.

Surgical Treatment of Obstructions.—To take up next the surgical treatment of cases with obstruction, one proceeds along entirely different principles. Here it must be recognized that a complication of the growth (or obstruction) has become for the time paramount in immediate importance to the tumor itself. The elaborate preparation described above for unobstructed cases is reduced to the washing out of the stomach and the administration of intravenous glucose and saline solution. The abdomen is opened, a brief exploration made to discover, if possible, the exact location of the growth, and a cecostomy done with a good-sized tube unless the cecum itself is involved, in which case ileostomy is performed. If the patient recovers from the obstruction, the second definitive operation is undertaken two weeks or more later, and follows the lines indicated above for the radical cure of the disease. The cecostomy will close spontaneously in many instances after the removal of the growth, but occasionally a third operation may be required to close it.

There has been a great deal of interest constantly directed toward the cure of malignancies in the alimentary tract, and this very natural concentration upon a permanent end-result has been the predominant objective in the surgical measures adopted. As a consequence of this attitude, palliative surgery of growths within the abdomen has in practice generally been limited to the relief of obstruction. Obstruction, when it occurs in a segment of the alimentary canal that permits a short circuiting anastomosis, has been handled by operations of that type and in other regions, such as the lowermost part of the sigmoid and rectum, and the cardiac end of the stomach has been dealt with by making artificial openings to the exterior to permit either the introduction of food or the escape of fecal material. It is one purpose of this paper to awaken interest in the possibility of doing more good for the patient by bolder and more radical attack on the primary disease, even when there exists no hope of permanent cure.

REPORT OF CASES

To illustrate in a concrete way what the writer has in mind, a few cases that have been done within the last two or three years will be cited as illustrations.

CASE 1.—Carcinoma of the ascending colon. Patient was a man of fifty-four, markedly anemic, with much loss of weight and great constipation. Operation disclosed a large growth in the bowel and palpable glands extending along the vessels as high as the aorta in the region of the renal arteries. The right side of the colon with a few inches of ileum was resected, and an anastomosis done between the lower ileum and the transverse colon. Patient lived about two years and a half, and died finally with extensive abdominal carcinomatoses. During the interval, however, he had been able to resume his occupation as a shoemaker and made a notable, although temporary, gain in weight, strength, and blood count.

CASE 2.—Similar in all respects to the one just cited. Same type of operation was done. Patient died, however, from pneumonia on the sixth day after operation. Autopsy showed that there remained behind a number of glands along the aorta that were involved in carcinoma, a condition which was known to exist at the time the operation was done. There have been two other cases of growth in the right side of the colon in which the principles involved, and the operation performed, were similar to these cases cited.

CASE 3.—Carcinoma of the splenic flexure of the colon. Woman of about sixty-three years of age, first seen with acute intestinal obstruction. Exploration revealed a small scirrhus growth in the splenic flexure and some nodules in the liver. A cecostomy was done for the immediate relief of the obstruction, and two weeks later the growth in the splenic flexure was resected, including practically all of the descending colon, and an anastomosis was made between the transverse colon and the sigmoid. The anastomosis leaked, and a fecal fistula developed with some breaking down of the second incision. The patient, however, survived this condition and lived for about three months, at which time she died rather suddenly with a circulatory collapse considered due either to an acute myocardial failure or coronary occlusion. No autopsy was secured.

CASE 4.—A man fifty-eight years of age, operated upon for obstructive symptoms in the sigmoid which was found to contain a carcinoma about the middle of the loop. The growth was resected with its mesentery as far as the inferior mesenteric vessels, but large glands that felt definitely malignant could be palpated considerably beyond the reach of operable removal. An end-to-end anastomosis was done between the two stumps of the sigmoid loop. Patient made an uninterrupted recovery, and is still living and well after two years.

CASE 5.—Woman of about thirty-five, similar in all respects to the case just cited, with a growth in the mid-sigmoid. This growth was removed with its mesentery by the Rankin obstructive resection method, but it was felt that glands beyond the reach of removal were definitely involved. A delayed anastomosis was done at a secondary operation, and this patient is still living and well after about two years.

There have been at least four or five other cases similar in all important respects to the last two.

COMMENT

It will be seen that during the last few years the writer has performed radical resections in a number of cases in which there was no expectation of permanent cure at the time the operation was performed. These cases all gave clinical evidence of the extension of the disease beyond the reach of radical removal, and in such cases it has been the general practice to do one of two things. First, if there seems no imminent danger of obstruction, to close the abdominal incision after exploring, and allow the conditions to remain undisturbed. Second, when obstruction seems imminent, to do some form of short-circuiting operation by anastomosis of the alimentary tract above and below the site of the growth. The reasons which induced departure from this customary plan of procedure are as follows: First, the desirability of removing the growth if that can be done without too formidable an operation. It is obvious that such removal will at once put a stop to the bleeding, ulceration, infection and absorption that are bound to continue from the surface of a gastro-intestinal cancer, even although a short-circuiting operation has been performed. It is evident that, if such an operation succeeds,

the patient will secure a much more pronounced beneficial effect in the quicker restitution of the quality of his blood, the freedom from absorption, the decrease in discomfort and pain, perhaps the disappearance of a palpable mass, and in the psychic benefit to be derived from the assurance that the growth has actually been taken out. Second, in these cases there is very little to lose. If our diagnosis be correct, such patients are going on to inevitable death in a fairly short time, and should some accident or misfortune take place as a result of the operative procedure, this inevitable outcome is simply anticipated by a short period of time. From the humanitarian standpoint, it may fairly be maintained that a patient who dies quickly after such an operation is more fortunate than one who lingers on for somewhat longer time, slowly dying with a growth in his abdomen. It seems to the writer, therefore, that his efforts to do more extensive palliative operations are entirely justified, both in theory and in practice, and he would urge that where inoperable malignancy in the gastro-intestinal tract permits of not too difficult removal, that the standard procedure should be resection since that affords the greatest measure of palliation. The distinct impression has also been obtained that life after such resections is not only more comfortable, but considerably longer. The underlying idea in this more aggressive palliative treatment of inoperable growths is the old and accepted principle of treating the patient and not the disease.

There is another type of malignancy of the large bowel in which resection is perhaps too formidable to be justified unless it carries with it the hope of a permanent cure. Such a situation is illustrated by carcinoma of the lowermost sigmoid, or of the rectum with, let us say, nodules in the liver. To remove such a growth is a major procedure in every sense of the word, and would leave the patient afterward with a permanent colostomy. This seems too much of a price to pay with too little gained in a case where cure cannot be hoped for. In these cases, the question of palliation resolves itself into provision of an outlet for fecal contents in case obstruction should develop. It is customary for the surgeon to try to estimate whether obstruction is threatening or will be long-delayed. If he thinks that obstruction is about to ensue, he will probably do a colostomy in the sigmoid above the growth. If, on the other hand, he believes that the patient's life may terminate from the disease before obstruction takes place, no colostomy will be performed. In such cases the writer has employed a device which does away with the necessity of trying to read the future. After the situation has been explored and hope of radical cure abandoned, a small left-sided McBurney incision is made. The sigmoid is drawn into this incision, so that a small cone of bowel, representing about one-fourth of its circumference, extends beyond the skin level. This protruding cone of bowel is fixed to the skin of the incision with a few silk sutures. The midline exploratory incision is then closed. The protruding portion of sigmoid soon becomes adherent to the abdominal wall, its serosa is rubbed off and replaced by a thin film of epithelium growing from the skin edges. The patient then has what resembles in every respect a small incisional hernia on the left side containing the attached sigmoid loop. Arrangements are now completed by which any development in the progress of the disease may be dealt with to best advantage. If obstruction never takes place, the patient is allowed to go to his end without the distress and inconvenience of a colostomy. On the other hand, if obstruction does occur, it can be relieved at once without any anesthetic or further operative procedure by simply plunging a knife into the protruding small portion of the sigmoid. In every case the maximum comfort and the minimum of pain, expense and worry, are provided for the patient. This procedure, which I have designated as precolostomy, I have used in a considerable number of cases of inoperable cancer of the rectosigmoid region, and have felt that it is a very considerable addition to the surgical resources in this field of work.

18 West Franklin Street.

THE FUTURE OF ANESTHESIOLOGY AS A MEDICAL SPECIALTY*

By CAROLINE B. PALMER, M. D.
San Francisco

WHAT causes have led to the equivocal position of anesthesiology?

Is the present trend for or against improvement?

Is anesthesiology a medical specialty?

If this specialty should be put on a strictly professional basis, would an adequate number of properly trained anesthetists be available?

Anesthesia, in the modern sense, dates from the demonstration of the anesthetic properties of ether in 1846, and shortly afterward of chloroform.

EARLY ATTITUDE TOWARD ANESTHESIA

From the beginning, the attitude of the medical profession of America toward this new and revolutionizing subject was different from that of England. This difference may be partly accounted for by the fact that for several years ether was the chief agent used in America, while chloroform early was favored in England. The relative margin of safety of these two anesthetics was, doubtless, one reason why in America it was believed that practically anyone could administer anesthetics, but in England this work was confined, almost from the start, to the medical profession.

In England, too, shortly after the introduction of anesthetics, the medical profession began to develop the science and art of anesthesia as a medical specialty. Snow's anesthetic research dates from about 1847. Snow was followed by Clover, and Clover by Hewitt. It was in the latter's era that the London Society of Anesthetists was formed, which ultimately became the Section on Anesthetics of the Royal Society of Medicine.

* Chairman's address, Anesthesiology Section of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.